

**D-27 Effects of 6-Aminonicotinamide on the Levels of NAD-,
NADP-Dependent-Dehydrogenases and Soluble Proteins in
the Various Tissues of Japanese Female Quail**

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The effects of 6-aminonicotinamide(6-AN), an analogue of nicotinamide, on levels of 6-phosphogluconate dehydrogenase, glucose 6-phosphate dehydrogenase, malic enzyme and soluble proteins in quail tissues were investigated. The intraperitoneal administration of 6-AN (multiple doses of 20 mg/kg body weight) gave rise to marked reduction in 6-phosphogluconate dehydrogenase activity in the liver. Similarly, the level of soluble protein was significantly reduced by 6-AN in the liver. However, the activities of glucose 6-phosphate dehydrogenase in the brain, heart, liver, kidney and pectoral muscle were not affected to any extent. Malic enzyme activity was markedly lowered in the liver but was dramatically enhanced in the kidney and pectoral muscle in the 6-AN treated group.

**D-28 Expression of the Heat Shock Proteins in Fish CHSE-214 and
Paralichthys olivaceus Liver Cells**

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In this study, we examined the expression of heat shock proteins (HSPs) in fish cell line CHSE-214 and primary cultured *paralichthys olivaceus* liver cells exposed to heat shock. In these cells HSP70 was the major polypeptide induced by an elevated temperature and is thus proposed that HSP70 plays an role(s) in protection against heat shock. In CHSE-214 cells either recovering from heat shock or experiencing prolonged heat shock, attenuation in the HSP90 and HSP70 induction occurred but this phenomenon did not occur in the syntheses of 40kDa and 42kDa proteins. The enhanced syntheses of these two proteins continued as long as CHSE-214 cells were given heat shock. These results suggest that down-regulation of HSP syntheses during prolonged heat shock may be controlled by several different, as yet undefined, mechanisms.